

## Formal fallacies[[edit](#)]

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Main article: [Formal fallacy](#)

A formal fallacy is an error in logic that can be seen in the [argument's form](#).<sup>[1]</sup> All formal fallacies are specific types of [non sequiturs](#).

- [Anecdotal fallacy](#) - using a personal experience or an isolated example instead of sound reasoning or compelling evidence.
- [Appeal to probability](#) – is a statement that takes something for granted because it would probably be the case (or might be the case).<sup>[2][3]</sup>
- [Argument from fallacy](#) – assumes that if an *argument* for some conclusion is fallacious, then the *conclusion* is false.<sup>[4]</sup>
- [Base rate fallacy](#) – making a probability judgment based on [conditional probabilities](#), without taking into account the effect of [prior probabilities](#).<sup>[5]</sup>
- [Conjunction fallacy](#) – assumption that an outcome simultaneously satisfying multiple conditions is more probable than an outcome satisfying a single one of them.<sup>[6]</sup>
- [Masked man fallacy](#) (illicit substitution of identicals) – the substitution of identical designators in a true statement can lead to a false one.<sup>[7]</sup>
- Unwarranted assumption fallacy - The fallacy of unwarranted assumption is committed when the conclusion of an argument is based on a premise (implicit or explicit) that is false or unwarranted. An assumption is unwarranted when it is false - these premises are usually suppressed or vaguely written. An assumption is also unwarranted when it is true but does not apply in the given context.

## Propositional fallacies[[edit](#)]

A propositional fallacy is an error in logic that concerns compound propositions. For a compound proposition to be true, the truth values of its constituent parts must satisfy the relevant logical connectives that occur in it (most commonly: <and>, <or>, <not>, <only if>, <if and only if>). The following fallacies involve inferences whose correctness is not guaranteed by the behavior of those logical connectives, and hence, which are not logically guaranteed to yield true conclusions.

Types of [Propositional](#) fallacies:

- [Affirming a disjunct](#) – concluded that one disjunct of a [logical disjunction](#) must be false because the other disjunct is true; *A or B; A; therefore not B*.<sup>[8]</sup>
- [Affirming the consequent](#) – the [antecedent](#) in an indicative conditional is claimed to be true because the [consequent](#) is true; *if A, then B; B, therefore A*.<sup>[8]</sup>

- [Denying the antecedent](#) – the [consequent](#) in an [indicative conditional](#) is claimed to be false because the [antecedent](#) is false; *if A, then B; not A, therefore not B.*<sup>[8]</sup>

### **Quantification fallacies**[\[edit\]](#)

A quantification fallacy is an error in logic where the quantifiers of the premises are in contradiction to the quantifier of the conclusion.

Types of [Quantification](#) fallacies:

- [Existential fallacy](#) – an argument has a universal premise and a particular conclusion.<sup>[9]</sup>

### **Formal syllogistic fallacies**[\[edit\]](#)

[Syllogistic fallacies](#) – logical fallacies that occur in [syllogisms](#).

- [Affirmative conclusion from a negative premise](#) (illicit negative) – when a categorical [syllogism](#) has a positive conclusion, but at least one negative premise.<sup>[9]</sup>
- [Fallacy of exclusive premises](#) – a categorical syllogism that is invalid because both of its premises are negative.<sup>[9]</sup>
- [Fallacy of four terms](#) (*quaternio terminorum*) – a categorical syllogism that has four terms.<sup>[10]</sup>
- [Illicit major](#) – a categorical syllogism that is invalid because its major term is not [distributed](#) in the major premise but distributed in the conclusion.<sup>[9]</sup>
- [Illicit minor](#) – a categorical syllogism that is invalid because its minor term is not distributed in the minor premise but distributed in the conclusion.<sup>[9]</sup>
- [Negative conclusion from affirmative premises](#) (illicit affirmative) – when a categorical syllogism has a negative conclusion but affirmative premises.<sup>[9]</sup>
- [Fallacy of the undistributed middle](#) – the middle term in a categorical syllogism is not distributed.<sup>[11]</sup>

### **Informal fallacies**[\[edit\]](#)

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*Main article:* [Informal fallacy](#)

Informal fallacies – arguments that are fallacious for reasons other than structural (formal) flaws and usually require examination of the argument's content.<sup>[12]</sup>

- [Appeal to the stone](#) (*argumentum ad lapidem*) – dismissing a claim as absurd without demonstrating proof for its absurdity.<sup>[13]</sup>

- [Argument from ignorance](#) (appeal to ignorance, *argumentum ad ignorantiam*) – assuming that a claim is true because it has not been or cannot be proven false, or vice versa.<sup>[14]</sup>
- [Argument from \(personal\) incredulity](#) (divine fallacy, appeal to common sense) – I cannot imagine how this could be true, therefore it must be false.<sup>[15][16]</sup>
- [Argument from repetition](#) (*argumentum ad infinitum*) – signifies that it has been discussed extensively until nobody cares to discuss it anymore.<sup>[17][18]</sup>
- [Argument from silence](#) (*argumentum e silentio*) – where the conclusion is based on the absence of evidence, rather than the existence of evidence.<sup>[19][20]</sup>
- [Argument to moderation](#) (false compromise, middle ground, fallacy of the mean, *argumentum ad temperantiam*) – assuming that the compromise between two positions is always correct.<sup>[21]</sup>
- Argumentum [ad hominem](#) – the evasion of the actual topic by directing an attack at your opponent.
  - [ergo decedo](#) – where a critic's perceived affiliation is seen as the underlying reason for the criticism and the critic is asked to stay away from the issue altogether.
- Argumentum verbosum – See Proof by verbosity, below.
- [Begging the question](#) (*petitio principii*) – providing what is essentially the conclusion of the argument as a premise.<sup>[22][23][24][25]</sup>
- [\(shifting the\) Burden of proof](#) (see – *onus probandi*) – I need not prove my claim, you must prove it is false.
- [Circular reasoning](#) (*circulus in demonstrando*) – when the reasoner begins with what he or she is trying to end up with; sometimes called *assuming the conclusion*.
- [Circular cause and consequence](#) – where the consequence of the phenomenon is claimed to be its root cause.
- [Continuum fallacy](#) (fallacy of the beard, line-drawing fallacy, sorites fallacy, fallacy of the heap, bald man fallacy) – improperly rejecting a claim for being imprecise.<sup>[26]</sup>
- [Correlative-based fallacies](#)
  - [Correlation proves causation](#) (*cum hoc ergo propter hoc*) – a faulty assumption that correlation between two variables implies that one causes the other.<sup>[27]</sup>
  - [Suppressed correlative](#) – where a correlative is redefined so that one alternative is made impossible.<sup>[28]</sup>

- [Equivocation](#) – the misleading use of a term with more than one meaning (by glossing over which meaning is intended at a particular time).<sup>[29]</sup>
  - [Ambiguous middle term](#) – a common ambiguity in syllogisms in which the [middle term](#) is equivocated.<sup>[30]</sup>
- [Ecological fallacy](#) – inferences about the nature of specific individuals are based solely upon aggregate statistics collected for the group to which those individuals belong.<sup>[31]</sup>
- [Etymological fallacy](#) – which reasons that the original or historical meaning of a word or phrase is necessarily similar to its actual present-day usage.<sup>[32]</sup>
- [Fallacy of accent](#) – a specific type of ambiguity that arises when the meaning of a sentence is changed by placing an unusual prosodic stress, or when, in a written passage, it's left unclear which word the emphasis was supposed to fall on.
- [Fallacy of composition](#) – assuming that something true of part of a whole must also be true of the whole.<sup>[33]</sup>
- [Fallacy of division](#) – assuming that something true of a thing must also be true of all or some of its parts.<sup>[34]</sup>
- [False attribution](#) – an advocate appeals to an irrelevant, unqualified, unidentified, biased or fabricated source in support of an argument.
  - [Fallacy of quoting out of context](#) (contextomy) – refers to the selective excerpting of words from their original context in a way that distorts the source's intended meaning.<sup>[35]</sup>
- [False authority](#) (single authority) – using an expert of dubious credentials or using only one opinion to sell a product or idea. Related to the [appeal to authority](#) fallacy.
- [False dilemma](#) (false dichotomy, fallacy of bifurcation, black-or-white fallacy) – two alternative statements are held to be the only possible options, when in reality there are more.<sup>[36]</sup>
- [False equivalence](#) – describing a situation of logical and apparent equivalence, when in fact there is none.
- [Fallacy of many questions](#) (complex question, fallacy of presupposition, loaded question, *plurium interrogationum*) – someone asks a question that presupposes something that has not been proven or accepted by all the people involved. This fallacy is often used rhetorically, so that the question limits direct replies to those that serve the questioner's agenda.

- [Fallacy of the single cause](#) (causal oversimplification<sup>[37]</sup>) – it is assumed that there is one, simple cause of an outcome when in reality it may have been caused by a number of only jointly sufficient causes.
- [Furtive fallacy](#) – outcomes are asserted to have been caused by the malfeasance of decision makers.
- [Gambler's fallacy](#) – the incorrect belief that separate, independent events can affect the likelihood of another random event. If a fair coin lands on heads 10 times in a row, the belief that it is "due to the number of times it had previously landed on tails" is incorrect.<sup>[38]</sup>
- Hedging – using words with ambiguous meanings, then changing the meaning of them later.
- [Historian's fallacy](#) – occurs when one assumes that decision makers of the past viewed events from the same perspective and having the same information as those subsequently analyzing the decision.<sup>[39]</sup> (Not to be confused with [presentism](#), which is a mode of historical analysis in which present-day ideas, such as moral standards, are projected into the past.)
- [Homunculus fallacy](#) – where a "middle-man" is used for explanation, this sometimes leads to regressive middle-men. Explains without actually explaining the real nature of a function or a process. Instead, it explains the concept in terms of the concept itself, without first defining or explaining the original concept. Explaining thought as something produced by a little thinker, a sort of homunculus inside the head, merely explains it as another kind of thinking (as different but the same).<sup>[40]</sup>
- Inflation of conflict – The experts of a field of knowledge disagree on a certain point, so the scholars must know nothing, and therefore the legitimacy of their entire field is put to question.<sup>[41]</sup>
- [If-by-whiskey](#) – an argument that supports both sides of an issue by using terms that are selectively emotionally sensitive.
- [Incomplete comparison](#) – in which insufficient information is provided to make a complete comparison.
- [Inconsistent comparison](#) – where different methods of comparison are used, leaving one with a false impression of the whole comparison.
- [Intentionality fallacy](#) – the insistence that the ultimate meaning of an expression must be consistent with the intention of the person from whom the communication originated (e.g. a work of fiction that is widely received as a blatant allegory must necessarily not be regarded as such if the author intended it not to be so.)<sup>[42]</sup>

- *Ignoratio elenchi* (irrelevant conclusion, missing the point) – an argument that may in itself be valid, but does not address the issue in question.<sup>[43]</sup>
- Kettle logic – using multiple, jointly inconsistent arguments to defend a position.
- Ludic fallacy – the belief that the outcomes of non-regulated random occurrences can be encapsulated by a statistic; a failure to take into account unknown unknowns in determining the probability of events taking place.<sup>[44]</sup>
- Moral high ground fallacy – in which one assumes a "holier-than-thou" attitude in an attempt to make oneself look good to win an argument.
- Moralistic fallacy – inferring factual conclusions from purely evaluative premises in violation of fact–value distinction. For instance, inferring *is* from *ought* is an instance of moralistic fallacy. Moralistic fallacy is the inverse of naturalistic fallacy defined below.
- Moving the goalposts (raising the bar) – argument in which evidence presented in response to a specific claim is dismissed and some other (often greater) evidence is demanded.
- Naturalistic fallacy – inferring evaluative conclusions from purely factual premises<sup>[45]</sup> in violation of fact–value distinction. For instance, inferring *ought* from *is* (sometimes referred to as the *is-ought fallacy*) is an instance of naturalistic fallacy. Also naturalistic fallacy in a stricter sense as defined in the section "Conditional or questionable fallacies" below is an instance of naturalistic fallacy. Naturalistic fallacy is the inverse of moralistic fallacy.
- Naturalistic fallacy fallacy<sup>[46]</sup> (anti-naturalistic fallacy<sup>[47]</sup>) – inferring impossibility to infer any instance of *ought* from *is* from the general invalidity of *is-ought fallacy* mentioned above. For instance, *is*  $P \vee \neg P$  does imply *ought*  $P \vee \neg P$  for any proposition  $P$ , although the naturalistic fallacy fallacy would falsely declare such an inference invalid. Naturalistic fallacy fallacy is an instance of argument from fallacy.
- Nirvana fallacy (perfect solution fallacy) – when solutions to problems are rejected because they are not perfect.
- Onus probandi – from Latin "onus probandi incumbit ei qui dicit, non ei qui negat" the burden of proof is on the person who makes the claim, not on the person who denies (or questions the claim). It is a particular case of the "argumentum ad ignorantiam" fallacy, here the burden is shifted on the person defending against the assertion.
- Petitio principii – see begging the question.

- [Post hoc ergo propter hoc](#) Latin for "after this, therefore because of this" (faulty cause/effect, coincidental correlation, correlation without causation) – X happened, then Y happened; therefore X caused Y. The Loch Ness Monster has been seen in this loch. Something tipped our boat over; it's obviously the Loch Ness Monster.<sup>[48]</sup>
- [Proof by assertion](#) – a proposition is repeatedly restated regardless of contradiction.
- [Proof by verbosity](#) (*argumentum verbosium*, proof by intimidation) – submission of others to an argument too complex and verbose to reasonably deal with in all its intimate details. (See also [Gish Gallop](#) and [argument from authority](#).)
- [Prosecutor's fallacy](#) – a low probability of false matches does not mean a low probability of *some* false match being found.
- [Proving too much](#) - using a form of argument that, if it were valid, could be used more generally to reach an absurd conclusion.
- [Psychologist's fallacy](#) – an observer presupposes the objectivity of his own perspective when analyzing a behavioral event.
- [Red herring](#) – a speaker attempts to distract an audience by deviating from the topic at hand by introducing a separate argument the speaker believes is easier to speak to.<sup>[49]</sup>
- [Referential fallacy](#)<sup>[50]</sup> – assuming all words refer to existing things and that the meaning of words reside within the things they refer to, as opposed to words possibly referring to no real object or that the meaning of words often comes from how we use them.
- [Regression fallacy](#) – ascribes cause where none exists. The flaw is failing to account for natural fluctuations. It is frequently a special kind of the *post hoc* fallacy.
- [Reification](#) (hypostatization) – a fallacy of ambiguity, when an abstraction (abstract belief or hypothetical construct) is treated as if it were a concrete, real event or physical entity. In other words, it is the error of treating as a "real thing" something that is not a real thing, but merely an idea.
- [Retrospective determinism](#) – the argument that because some event has occurred, its occurrence must have been inevitable beforehand.
- [Shotgun argumentation](#) – the arguer offers such a large number of arguments for their position that the opponent can't possibly respond to all of them. (See "Argument by verbosity" and "[Gish Gallop](#)", above.)
- [Special pleading](#) – where a proponent of a position attempts to cite something as an exemption to a generally accepted rule or principle without justifying the exemption.



- [Wrong direction](#) – cause and effect are reversed. The cause is said to be the effect and vice versa.<sup>[51]</sup>

### Faulty generalizations<sup>[edit]</sup>

[Faulty generalizations](#) – reach a conclusion from weak premises. Unlike fallacies of relevance, in fallacies of defective induction, the premises are related to the conclusions yet only weakly buttress the conclusions. A faulty generalization is thus produced.

- [Accident](#) – an exception to a generalization is ignored.<sup>[52]</sup>
  - [No true Scotsman](#) – when a generalization is made true only when a counterexample is ruled out on shaky grounds.<sup>[53]</sup>
- [Cherry picking](#) (suppressed evidence, incomplete evidence) – act of pointing at individual cases or data that seem to confirm a particular position, while ignoring a significant portion of related cases or data that may contradict that position.<sup>[54]</sup>
- [False analogy](#) – an [argument by analogy](#) in which the analogy is poorly suited.<sup>[55]</sup>
- [Hasty generalization](#) (fallacy of insufficient statistics, fallacy of insufficient sample, fallacy of the lonely fact, leaping to a conclusion, hasty induction, *secundum quid*, converse accident) – basing a broad conclusion on a small sample.<sup>[56]</sup>
- [Inductive fallacy](#) – A more general name to some fallacies, such as hasty generalization. It happens when a conclusion is made of premises that lightly support it.
- [Misleading vividness](#) – involves describing an occurrence in vivid detail, even if it is an exceptional occurrence, to convince someone that it is a problem.
- [Overwhelming exception](#) – an accurate generalization that comes with qualifications that eliminate so many cases that what remains is much less impressive than the initial statement might have led one to assume.<sup>[57]</sup>
- [Thought-terminating cliché](#) – a commonly used phrase, sometimes passing as folk wisdom, used to quell [cognitive dissonance](#), conceal lack of thought-entertainment, move on to other topics etc. but in any case, end the debate with a cliché—not a point.

### Red herring fallacies<sup>[edit]</sup>

A red herring fallacy is an error in logic where a proposition is, or is intended to be, misleading in order to make irrelevant or false inferences. In the general case any logical inference based on fake arguments, intended to replace the lack of real arguments or to replace implicitly the subject of the discussion.<sup>[58][59][60]</sup>



Red herring – argument given in response to another argument, which is irrelevant and draws attention away from the subject of argument. See also irrelevant conclusion.

- Ad hominem – attacking the arguer instead of the argument.
  - Poisoning the well – a type of *ad hominem* where adverse information about a target is presented with the intention of discrediting everything that the target person says.<sup>[61]</sup>
  - Abusive fallacy – a subtype of "ad hominem" when it turns into verbal abuse of the opponent rather than arguing about the originally proposed argument.<sup>[62]</sup>
- Vacuous truth
- Appeal to authority (*argumentum ab auctoritate*) – where an assertion is deemed true because of the position or authority of the person asserting it.<sup>[63][64]</sup>
  - Appeal to accomplishment – where an assertion is deemed true or false based on the accomplishments of the proposer.<sup>[65]</sup>
- Appeal to consequences (*argumentum ad consequentiam*) – the conclusion is supported by a premise that asserts positive or negative consequences from some course of action in an attempt to distract from the initial discussion.<sup>[66]</sup>
- Appeal to emotion – where an argument is made due to the manipulation of emotions, rather than the use of valid reasoning. <sup>[67]</sup>
  - Appeal to fear – a specific type of appeal to emotion where an argument is made by increasing fear and prejudice towards the opposing side<sup>[68][69]</sup>
  - Appeal to flattery – a specific type of appeal to emotion where an argument is made due to the use of flattery to gather support.<sup>[70]</sup>
  - Appeal to pity (*argumentum ad misericordiam*) – an argument attempts to induce pity to sway opponents.<sup>[71]</sup>
  - Appeal to ridicule – an argument is made by presenting the opponent's argument in a way that makes it appear ridiculous.<sup>[72][73]</sup>
  - Appeal to spite – a specific type of appeal to emotion where an argument is made through exploiting people's bitterness or spite towards an opposing party.<sup>[74]</sup>
  - Wishful thinking – a specific type of appeal to emotion where a decision is made according to what might be pleasing to imagine, rather than according to evidence or reason.<sup>[75]</sup>

- [Appeal to equality](#) – where an assertion is deemed true or false based on an assumed pretense of equality.<sup>[76]</sup>
- [Appeal to motive](#) – where a premise is dismissed by calling into question the motives of its proposer.
- [Appeal to nature](#) – wherein judgment is based solely on whether the subject of judgment is 'natural' or 'unnatural'.<sup>[77]</sup>
- [Appeal to novelty](#) (*argumentum novitatis/antiquitatis*) – where a proposal is claimed to be superior or better solely because it is new or modern.<sup>[78]</sup>
- [Appeal to poverty](#) (*argumentum ad Lazarum*) – supporting a conclusion because the arguer is poor (or refuting because the arguer is wealthy). (Opposite of [appeal to wealth](#).)<sup>[79]</sup>
- [Appeal to tradition](#) (*argumentum ad antiquitatem*) – a conclusion supported solely because it has long been held to be true.<sup>[80]</sup>
- [Appeal to wealth](#) (*argumentum ad crumenam*) – supporting a conclusion because the arguer is wealthy (or refuting because the arguer is poor).<sup>[81]</sup> (Sometimes taken together with the [appeal to poverty](#) as a general appeal to the arguer's financial situation.)
- [Argument from silence](#) (*argumentum ex silentio*) – a conclusion based on silence or lack of contrary evidence.
- [Argumentum ad baculum](#) (appeal to the stick, appeal to force, appeal to threat) – an argument made through coercion or threats of force to support position.<sup>[82]</sup>
- [Argumentum ad populum](#) (appeal to widespread belief, bandwagon argument, appeal to the majority, appeal to the people) – where a proposition is claimed to be true or good solely because many people believe it to be so.<sup>[83]</sup>
- [Association fallacy](#) (guilt by association) – arguing that because two things share a property they are the same.<sup>[84]</sup>
- [Bulverism](#) (Psychogenetic Fallacy) – inferring why an argument is being used, associating it to some psychological reason, then assuming it is invalid as a result. It is wrong to assume that if the origin of an idea comes from a biased mind, then the idea itself must also be a falsehood.<sup>[41]</sup>
- [Chronological snobbery](#) – where a thesis is deemed incorrect because it was commonly held when something else, clearly false, was also commonly held.<sup>[85][86]</sup>
- [Fallacy of relative privation](#) – dismissing an argument due to the existence of more important, but unrelated, problems in the world.

- [Genetic fallacy](#) – where a conclusion is suggested based solely on something or someone's origin rather than its current meaning or context.<sup>[87]</sup>
- [Judgmental language](#) – insulting or pejorative language to influence the recipient's judgment.
- [Naturalistic fallacy](#) (is–ought fallacy,<sup>[88]</sup> naturalistic fallacy<sup>[89]</sup>) – claims about what ought to be on the basis of statements about what is.
- [Reductio ad Hitlerum](#) (playing the Nazi card) – comparing an opponent or their argument to Hitler or Nazism in an attempt to associate a position with one that is universally reviled. (See also – [Godwin's law](#))
- [Straw man](#) – an argument based on misrepresentation of an opponent's position.<sup>[90]</sup>
- [Texas sharpshooter fallacy](#) – improperly asserting a cause to explain a cluster of data.<sup>[91]</sup>
- [Tu quoque](#) ("you too", appeal to hypocrisy, I'm rubber and you're glue) – the argument states that a certain position is false or wrong or should be disregarded because its proponent fails to act consistently in accordance with that position.<sup>[92]</sup>
- [Two wrongs make a right](#) – occurs when it is assumed that if one wrong is committed, another wrong will cancel it out.<sup>[93]</sup>

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#### Conditional or questionable fallacies<sup>[edit]</sup>

- [Broken window fallacy](#) – an argument that disregards lost opportunity costs (typically non-obvious, difficult to determine or otherwise hidden) associated with destroying property of others, or other ways of externalizing costs onto others. For example, an argument that states breaking a window generates income for a window fitter, but disregards the fact that the money spent on the new window cannot now be spent on new shoes.<sup>[94]</sup>
- [Definist fallacy](#) – involves the confusion between two notions by defining one in terms of the other.<sup>[95]</sup>
- [Naturalistic fallacy](#) – attempts to prove a claim about ethics by appealing to a definition of the term "good" in terms of either one or more claims about natural properties (sometimes also taken to mean the [appeal to nature](#)) or God's will.<sup>[77]</sup>
- [Slippery slope](#) (thin edge of the wedge, [camel's nose](#)) – asserting that a relatively small first step inevitably leads to a chain of related events culminating in some significant impact/event that should not happen, thus the first step should not happen. While this fallacy is a popular one, it is, in its essence, an appeal to

probability fallacy. (e.g. if person x does y then z would [probably] occur, leading to q, leading to w, leading to e.)<sup>[96]</sup> This is also related to the [Reductio ad absurdum](#).

### COMMON FALLACIES IN REASONING

1. FAULTY CAUSE: (*post hoc ergo propter hoc*) mistakes correlation or association for causation, by assuming that because one thing follows another it was caused by the other.

example: A black cat crossed Babbs' path yesterday and, sure enough, she was involved in an automobile accident later that same afternoon.

example: The introduction of sex education courses at the high school level has resulted in increased promiscuity among teens. A recent study revealed that the number of reported cases of STDs (sexually transmitted diseases) was significantly higher for high schools that offered courses in sex education than for high schools that did not.

2. SWEEPING GENERALIZATION: (*dicto simpliciter*) assumes that what is true of the whole will also be true of the part, or that what is true in most instances will be true in all instances.

example: Muffin must be rich or have rich parents, because she belongs to ZXQ, and ZXQ is the richest sorority on campus.

example: I'd like to hire you, but you're an ex-felon and statistics show that 80% of ex-felons recidivate.

3. HASTY GENERALIZATION: bases an inference on too small a sample, or on an unrepresentative sample. Often, a single example or instance is used as the basis for a broader generalization.

example: All of those movie stars are really rude. I asked Kevin Costner for his autograph in a restaurant in Westwood the other evening, and he told me to get lost.

example: Pit Bulls are actually gentle, sweet dogs. My next door neighbor has one and his dog loves to romp and play with all the kids in the neighborhood!

4. FAULTY ANALOGY: (can be literal or figurative) assumes that because two things, events, or situations are alike in some known respects, that they are alike in other unknown respects.

example: What's the big deal about the early pioneers killing a few Indians in order to settle the West? After all, you can't make an omelette without breaking a few eggs.

example: Banning "head" shops from selling drug paraphernalia in order to curb drug abuse makes about as much sense as banning bikinis to reduce promiscuity.

5. APPEAL TO IGNORANCE: (*argumentum ad ignorantiam*) attempts to use an opponent's inability to disprove a conclusion as proof of the validity of the conclusion, i.e. "You can't prove I'm wrong, so I must be right."

example: We can safely conclude that there is intelligent life elsewhere in the galaxy, because thus far no one has been able to prove that there is not.

example: The new form of experimental chemotherapy must be working; not a single patient has returned to complain.

6. BIFURCATION: (either-or, black or white, all or nothing fallacy) assumes that two categories are mutually exclusive and exhaustive, that is, something is either a member of one or the other, but not both or some third category.

example: Either you favor a strong national defense, or you favor allowing other nations to dictate our foreign policy.

example: It's not TV. It's HBO.

7. FALSE DILEMMA: (a form of bifurcation) implies that one of two outcomes is inevitable, and both have negative consequences.

example: Either you buy a large car and watch it guzzle away your paycheck, or you buy a small car and take a greater risk of being injured or killed in the event of an accident.

example: You can put your money in a savings account, in which case the IRS will tax you on the interest, and inflation will erode the value of your money, or you can avoid maintaining a savings account in which case you will have nothing to fall back on in a financial emergency.

8. FAULTY SIGN: (also includes argument from circumstance) wrongly assumes that one event or phenomenon is a reliable indicator or predictor of another event or phenomenon.

example: the cars driving in the opposite direction have their lights on; they must be part of a funeral procession.

example: That guy is wearing a Raiders jacket and baggy pants. I'll bet he's a gang member.

9. DAMNING THE SOURCE: (ad hominem, sometimes called the genetic fallacy) attempts to refute an argument by indicting the source of the argument, rather than the substance of the argument itself.

example: There is no reason to listen to the arguments of those who oppose school prayer, for they are the arguments of atheists!

example: The American Trial Lawyers Association favors of this piece of legislation, so you know it has to be bad for ordinary citizens.

10. TU QUOQUE: (look who's talking or two wrongs make a right) pointing to a similar wrong or error committed by another.

example: Gee, Mom and Dad, how can you tell me not to do drugs when you both smoke cigarettes and drink alcohol?

example: The United States has no business criticizing the human rights policies of the Third World nations, not as long as discrimination and segregation continue to exist in the United States.

11. EQUIVOCATION: allows a key word or term in an argument to shift its meaning during the course of the argument. The result is that the conclusion of the argument is not concerned with the same thing as the premise(s).

example: Only man is rational. No woman is a man. Therefore, no woman is rational.

example: No one who has the slightest acquaintance with science can reasonably doubt that the miracles in the Bible actually took place. Every year we witness countless new miracles in the form recombinant DNA, micro-chips, organ transplants, and the like. (the word "miracle" does not have the same meaning in each case)

12. BEGGING THE QUESTION: (*petitio principii*) entails making an argument, the conclusion of which is based on an unstated or unproven assumption. In question form, this fallacy is known as a COMPLEX QUESTION.

example: Abortion is murder, since killing a baby is an act of murder.

example: Have you stopped beating your wife?

13. TAUTOLOGY: (a sub-category of circular argument) defining terms or qualifying an argument in such a way that it would be impossible to disprove the argument. Often, the rationale for the argument is merely a restatement of the conclusion in different words.

example: The Bible is the word of God. We know this because the Bible itself tells us so.

example: You are a disagreeable person and, if you disagree with me on this, it will only further prove what a disagreeable person you are.

14. APPEAL TO AUTHORITY: (*ipse dixit* also called *ad verecundiam* sometimes) attempts to justify an argument by citing a highly admired or well-known (but not necessarily qualified) figure who supports the conclusion being offered.

example: If it's good enough for (insert celebrity's name here), it's good enough for me.

example: Laws against marijuana are plain silly. Why, Thomas Jefferson is known to have raised hemp on his own plantation.

15. APPEAL TO TRADITION: (don't rock the boat or *ad verecundiam*) based on the principle of "letting sleeping dogs lie". We should continue to do things as they have been done in the past. We shouldn't challenge time-honored customs or traditions.

example: Of course we have to play "pomp and circumstance" at graduation, because that's always been the song that is played.

example: Why do I make wine this way? Because my father made wine this way, and his father made wine this way.

16. APPEAL TO THE CROWD: (*ad populum* or playing to the gallery) refers to popular opinion or majority sentiment in order to provide support for a claim. Often the "common man" or "common sense" provides the basis for the claim.

example: all I can say is that if living together is immoral, then I have plenty of company.

example: Professor Windplenty's test was extremely unfair. Just ask anyone who took it.

17. STRAW MAN: stating an opponent's argument in an extreme or exaggerated form, or attacking a weaker, irrelevant portion of an opponent's argument.

example: A mandatory seat belt law could never be enforced. You can't issue citations to dead people.

example: What woman in her right mind could truly desire total equality with men? No woman wants the right to be shot at in times of war, the right to have to pay alimony, or the right to have to use the same restrooms as men.

18. SLIPPERY SLOPE: (sometimes called a snowball argument or domino theory) suggests that if one step or action is taken it will invariably lead to similar steps or actions, the end results of which are negative or undesirable. A slippery slope always assume a chain reaction of cause-effect events which result in some eventual dire outcome.

example: If the Supreme Court allows abortion, next think you know they'll allow euthanasia, and it won't be long before society disposes of all those persons whom it deems unwanted or undesirable.

example: If I let one student interrupt my lecture with a question, then I'll have to let others and, before long, there won't be any time left for my lecture.

19. APPEALING TO EXTREMES: A fallacy very similar to slippery slope, which involves taking an argumentative claim or assertion to its extreme, even though the arguer does not advocate the extreme interpretation. The difference between the two fallacies is that appealing to extremes does not necessarily involve a sequence of causal connections.

example: Husband to ex-wife: Well, if you want to be completely fair about dividing everything up, you should get one of my testicles and I should get one of your breasts!



example: Debtor to creditor: Hey, you've already repossessed my car and my television. Why don't you just draw a quart of blood or carve a pound of flesh from my heart too?

20. HYPOTHESIS CONTRARY TO FACT: This fallacy consists of offering a poorly supported claim about what might have happened in the past or future if circumstances or conditions were other than they actually were or are. The fallacy also involves treating hypothetical situations as if they were fact.

example: If you had only tasted the stewed snails, I'm sure you would have liked them.

example: If Hitler had not invaded Russia and opened up two military fronts, the Nazis would surely have won the war.

21. NON SEQUITAR: (literally means "does not follow") in a general sense any argument which fails to establish a connection between the premises and the conclusion may be called a non-sequitar. In practice, however, the label non-sequitar tends to be reserved for arguments in which irrelevant reasons are offered to support a claim.

example: I wore a red shirt when I took the test, so that is probably why I did so well on the test.

example: Mr Boswell couldn't be the person who poisoned our cat, Truffles, because when I used to take Truffles for walks he always smiled and said "Hello" when we walked by.

22. RED HERRING: attempting to hide a weakness in an argument by drawing attention away from the real issue. A red herring fallacy is thus a diversionary tactic or an attempt to confuse or fog the issue being debated. The name of the fallacy comes from the days of fox hunting, when a herring was dragged across the trail of a fox in order to throw the dogs off the scent.

example: accused by his wife of cheating at cards, Ned replies "Nothing I do ever pleases you. I spent all last week repainting the bathroom, and then you said you didn't like the color."

example: There's too much fuss and concern about saving the environment. We can't create an Eden on earth. And even if we could, remember Adam and Eve got bored in the Garden of Eden anyway!

23. INCONSISTENCY: advancing an argument that is self-contradictory, or that is based on mutually inconsistent premises.

Example: A used car salesperson says, "Hey, you can't trust those other car salesman. They'll say anything to get you to buy a car from them."

Example: A parent has just read a child the story of Cinderella. The child asks, "If the coach, and the footmen, and the beautiful clothes all turned

back into the pumpkin, the mice, and the rags, then how come the glass slipper didn't change back too?"

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